

REMARKS

Claims 7-8 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants respectfully traverse this rejection, however, in order to expedite prosecution Claims 7-8 have been amended in a manner that should obviate this rejection. The specification has been amended to include this information.

Claims 1-5 and 9 were rejected under 35 U.S.C. 102(b) as being anticipated by Lin (U.S. 5,281,261). Applicants respectfully traverse this rejection.

The Examiner states that

"Lin discloses composite colorant polymer particles, i.e. modified pigment particle, obtained by polymerizing at least one monomer in the presence of colorant *in situ* using emulsion polymerization. The monomers include sodium styrene sulfonate salt. The colored resin particles have average particle size of less than 1 μm . The ratio of colorant to polymer is 1:9 to 9:1. The polymer is formed by mixing initiator and pigment dispersion, i.e. pigment, dispersant, water, to which is added monomer and initiator. Attention is drawn to example VIB (col. 18, lines 17-56) wherein Lin discloses adding (i) mixture of water, pigment, monomer, and initiator to (ii) mixture of monomer and initiator. Similarly, example IX of Lin discloses adding to mixture of (i) water, pigment, monomer, and initiator, a (ii) mixture of monomer and initiator. Thus, in both examples, a portion of the initiator is added to aqueous colorant mixture, i.e. comprising pigment, monomer, and initiator, before adding a monomer mixture, i.e. monomer and initiator There is no explicit disclosure that the composite colorant polymer particles are stable, i. e. do not flocculate for up to 20 minutes when a dispersion containing the particles is added to acetone at 1 % by weight, as presently claimed. However, given that Lin discloses composite colorant polymer particles identical to that presently claimed, it is clear that the composite colorant polymer particles would inherently possess same stability as presently claimed."

The Examiner further states that

"It is noted that the present claims recite "consisting essentially of transitional language with respect to the aqueous colorant mixture, i.e. "consisting essentially of colorant particles, dispersant or surfactants, and water". While Lin discloses that the aqueous colorant mixture contains monomer, on the one hand, it is noted that while it is recognized that the phrase "consisting essentially of" narrows the scope of the claims to

the specified materials and those which do not materially affect the basic and novel characteristics of the claimed invention, absent a clear indication of what the basic and novel characteristics are, "consisting essentially of is construed as equivalent to "comprising". Further, the burden is on the applicant to show that the additional ingredients in the prior art, i.e. monomer, would in fact be excluded from the claims and that such ingredients would materially change the characteristics of the applicant's invention, See MPEP 2111.03."

The Applicants have submitted herewith a declaration from Dr. Reczek describing an example that is similar to Examples VIB and IX wherein Lin discloses adding a (i) mixture of water, pigment, monomer, and initiator to (ii) mixture of monomer. The results clearly show that the resulting particles are not stable and do not meet the requirements of amended claim 1. This example also shows that "the additional ingredients in the prior art, i.e. monomer, would in fact be excluded from the claims and that such ingredients would materially change the characteristics of the applicant's invention."

The Examiner also argues that Lin discloses an aqueous colorant mixture wherein the monomer is utilized as a wetting agent to disperse pigment, i.e. functions as a dispersant, and thus, the monomer in the aqueous colorant phase of Lin would fall within the scope of the present claims, i.e. the aqueous colorant mixture of Lin contains only water, pigment, and dispersant (monomer). Although Applicants would argue that those skilled in the art would not normally consider monomer to be a dispersant, in order to expedite prosecution, Applicants have amended the claims to provide that no monomer is present in the pigment mixture. Support for this amendment is found at page 6 of the current application.

In light of the above, it is clear that Lin does not anticipate the present claims.

Claims 1 and 3-5 were rejected under 35 U.S.C. 102(b) as being anticipated by Shintani et al. (U.S. 4,623,689). Applicants respectfully traverse this rejection.

The Examiner states that

"Shintani et al. disclose stable composite colorant polymer particles, i.e. stable colored polymer, which is formed in the presence of colorant *in situ* using emulsion polymerization wherein the colored

polymer is obtained from monomers such as sodium styrene sulfonate, butadiene, isoprene, acrylonitrile, alkyl (meth)acrylate, and styrene. The polymer has average particle size of less than 0.3 μm , or for instance, 0.12 μm (col.2, line 60-col.3, line 42, col.3, lines 49-50, col.5, lines 25-26, col.7, lines 33-42, col.9, lines 7-12, and example 35). Attention is drawn to example 35 that discloses first adding initiator, i.e. sodium metabisulfite, to colorant mixture then adding this mixture to monomer and additional initiator, i.e. butyl hydroperoxide. Thus, Shintani et al. add portion of an initiator to colorant mixture before adding monomer mixture.

Shintani et al. disclose that the composite colorant polymer particles are stable even when stored for long times (col.9, lines 36-38), however, there is no explicit disclosure that the particles are stable as defined by the present claims, i.e. do not flocculate for up to 20 minutes when a dispersion containing the particles is added to acetone at 1% by weight, as presently claimed. However, given that Shintani et al. disclose composite colorant polymer particles identical to that presently claimed, it is clear that the composite colorant polymer particles would inherently possess same stability as presently claimed. In light of the above, it is clear that Shintani et al. anticipates the present claims."

Shintani is directed to the use of a basic dye with an ethylenically unsaturated sulfonic acid polymer or copolymer. In contrast, Applicants have amended the independent claims of the current application to provide that the colorant is a pigment. Support for this amendment is found in original claim 2. Therefore, Shintani cannot anticipate the current invention.

Claim 6 was rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (U.S. 5,281,261) or Shintani et al. (U.S. 4,623,689) either of which in view of Miyabayashi et al. (U.S. 6,271,285). Applicants respectfully traverse this rejection.

Lin and Shintani have been discussed in detail above. Neither of these references discloses or suggests the current invention. Miyabayashi does not even discuss or describe a method of making a composite pigment polymer particle, much less making such a composite using the method of the current invention. Miyabayashi relates to the use of a polymer particle as an additive in an ink jet ink. Therefore the current invention cannot be obvious in light of Lin, Shintani, or Miyabayashi, either alone or in combination.

Claim 9 was rejected under 35 U.S.C. 103(a) as being unpatentable over Shintani et al. (U.S. 4,623,689) in view of Lin (U.S. 5,281,261). Applicants respectfully traverse this rejection.

Lin and Shintani have been discussed in detail above. As neither of these references discloses or suggests the current claims, the current invention cannot be obvious in light of Lin or Shintani, either alone or in combination.

In light of the above amendments and remarks, it is respectfully requested that the amended claims be allowed.

Respectfully submitted,

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